(d) what are the constraints in exploration of such minerals?

THE MINISTER OF STATE OF THE MINISTRY OF PLANNING AND PROGRAMME IMPLEMENTATION AND MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI YOGINDER K. ALAGH): (a) Exploration work for uranium and thorium, the minerals used/likely to be used for nuclear energy, has been carried out by the Atomic Minerals Division (AMD) of the Department of Atomic Energy (DAE) in almost all the states of the country. Further exploration is being carried out to locate additional deposits of high grade uranium for future requirements. The States where uranium has been located are Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Meghalaya, Rajasthan and Uttar Pradesh, while thorium has been located in Kerala, Orissa, Andhra Pradesh and Tamil Nadu.

(b) The other atomic minerals being explored by the AMD are those containing Beryllium, Columbium-Tantalum, Lithium, Zirconium and Titanium.

(c) DAE has been able to master the complete fuel cycle beginning with mining the ore, fabricating the fuel rods and safely disposing of the nuclear waste. Reprocessing the waste to obtain plutonium, which is also a nuclear fuel, has also been successfully done by the Department. By converting thorium to U-233 in nuclear reactors, it would be possible to use it also as a fuel in future.

(d) Though there are no severe constraints, sometimes the areas in which there may be promising deposits fall in difficult terrain. Some of these areas also may be under reserve forests or National Park for preseving flora and fauna and hence prove difficult to carry out exploration as it may disturb wildlife habitats or cause damage to the flora or infringe on forest conservation laws.

Kaiga Atomic Power Station

3495. SHRI K. RAHMAN KHAN: Will the PRIME MINISTER be pleased to state:

(a) what is the total expenditure incurred on Kaiga Atomic Power Station till 31st March, 1997;

(b) by when the project was originally scheduled to be completed and its estimated cost;

(c) by when the project is now likely to be completed and what would be estimated cost of project at the time of completion; and

(d) what are the main reasons for such a long delay and who is responsible?

THE MINISTER OF STATE OF THE MINISTRY OF PLANNING AND PROGRAMME IMPLEMENTATION AND MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY(SHRI YOGINDER K. ALAGH): (a) Total expenditure incurred on Kaiga Atomic Power Project till 31st March, 1997 is Rs. 1745.47 crore (provisional).

(b) The Project was originally scheduled to be completed by December, 1995 at an estimated cost (sanctioned in 1987) of Rs. 730.72 crore (without interest during construction) to be fully funded by Government from budgetary sources.

(c) Kaiga-2 and Kaiga-1 are likely to be completed by May, 1998 and Novemebr, 1998 respectively. Revised sanctioned cost of the Project is Rs. 2275 crore which includes Rs. 685 crore Interest During Construction with debt/equity ratio of 2:1.

(d) There was an initial delay of about one year in the commencement of work of concreting, after completion of site excavation work on schedule, due to revision of guidelines and design review of all buildings and structures by the Atomic Energy Regulatory Board. Partial delamination of the undersurface of the inner containment dome of Kaiga Unit-1

in May, 1994 and the resultant need for re-engineering of the design and getting regulatory clearance for the revised design and for recommencement of work has also contributed to the delay in the completion of the Project.

Nuclear Power Plants in the country

3496. SHRI AKHILESH DAS: Will the PRIME MINISTER be pleased to state:

(a) what is the number of Nuclear Power Plants in the country, State-wise alongwith their existing capacity;

(b) the ongoing nuclear power projects alongwith their locations and the outlay approved therefor;

(c) whether any proposal in this regard is pending with Government; if so, the details thereof and by when it is likely to be cleared;

(d) whether it is a fact that a nuclear power plant of 10000 MW nuclear power capacity which was to be completed by the end of 2000, has not commenced so far despite approval in 1984; and

(e) if so, what are the reasons for such inordinate delay?

THE MINISTER OF STATE OF THE MINISTRY OF PLANNING AND PROGRAMME IMPLEMENTATION AND MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI YOGINDER K. ALAGH): (a) There are ten Nuclear Power Reactors installed in the country. The present rated capacity and locations of these nuclear power plants are given in the following table:

No.	Station/ Unit	Capacity MWe	Location
1.	TAPS-1	160	Tarapur, Maharashtra
2.	TAPS-2	160	
3.	RAPS-1	100	Rawatbhata, Rajasthan
4.	RAPS-2	200	
5.	MAPS-1	170	Kalpakkam, Tamil Nadu
6.	MAPS-2	170	
7.	NAPS-1	220	Narora, Uttar Pradesh
8.	NAPS-2	220	
9.	KAPS-1	220	Kakrapar, Gujarat
10.	KAPS-2	220	

RAPS-2, which is under shutdown since August, 1994 for enmasse coolant channel replacement work, is expected to be restarted in the year 1998.

(b) Kaiga Atomic Power Project Units 1&2 (2×200 MWe) at Kaiga in Karnataka with sanctioned cost of Rs. 2275 crores and Rajasthan Atomic Power Project Units 3&4 (2×220 MWe) at Rawatbhata in Rajasthan with sanctioned cost of Rs. 2107 crores are presently under construction.

(c) IX Plan proposals under formulation include commencement of work on 2×500 MWe Units at Tarapur (TAPP 3&4), 2×220 MWe Units at Kaiga (Kaiga 3&4), 2×1000 MWe Kudankulam Atomic Power Project in Tamil Nadu in cooperation with the Russian Federation, and one unit of 500 MWe Prototype Fast Breeder Reactor (PFBR) at Kalpakkam.

(d) and (e) The nuclear power profile drawn up during the eighties envisaged in a priliminary manner establishment of 10,000 MWe nuclear power generating capacity by 2000 AD. It has not been